



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,376	09/29/2000	Robert Sam Zorich	06031P USA	1401

23543 7590 09/22/2003

AIR PRODUCTS AND CHEMICALS, INC.
PATENT DEPARTMENT
7201 HAMILTON BOULEVARD
ALLENTOWN, PA 181951501

EXAMINER

CHAUDHRY, SAEED T

ART UNIT

PAPER NUMBER

1746

DATE MAILED: 09/22/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/675,376	ZORICH ET AL.
	Examiner Saeed T Chaudhry	Art Unit 1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 07 July 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,5-36 and 38-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 5-7,28 and 29 is/are allowed.
- 6) Claim(s) 1,8-27,30-36 and 38-44 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
- Certified copies of the priority documents have been received.
 - Certified copies of the priority documents have been received in Application No. _____.
 - Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's amendments and remarks filed July 7, 2003 have been acknowledged by the examiner and entered. Claims 2-4 and 37 have been canceled and claims 1, 5-36, 38-44 are pending in this application for consideration.

Claim Objections

Claims 20-21 and 24-27 are objected to because of the following informalities: . Appropriate correction is required.

Claims 20, 21 and 24-27 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 20, 21 and 24-27 recite "chemicals selected from the group, , sorbent selected from the group, solvent and chemical, perfluorocarbon and volatility oil", which are chemicals used in the future and does not further limit or define the structure of the apparatus being claimed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (c) he has abandoned the invention.
- (d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States.
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by

Art Unit: 1746

another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

(f) he did not himself invent the subject matter sought to be patented.

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

Claims 1, 11-12, 14-15, 17-18, 20-27 are rejected under 35 U.S.C. 102(a) as being anticipated by

Voloshin et al.

Voloshin et al. (5,964,230) disclose a method and apparatus for solvent purging a process line of chemical in a process chemical system. A source container of solvent 10 (source chemical solvent ampoule) is connected to a source of push gas through line 12 and push gas valve V.sub.3. The push gas is a pressurized high purity inert gas, such as; nitrogen, helium or argon used to push solvent through various process lines. The container 10 is filled with additional solvent as necessary through line 14 and valve V.sub.11. Solvent is dispensed from the container 10 through line 16, third solvent valve V.sub.1, line 18, first solvent valve V.sub.2, line 24, second solvent valve V.sub.4 and finally solvent delivery line 28, which ends in a coaxially internal discharge nozzle 32 inside process line 30. Solvent delivery line 28, including lines 24, 18 and 16, is also connected to a second source of vacuum 22 through valve V.sub.12, and line 20, as well as a source of purge gas 29, which is connected controllably to line 24 through valve V.sub.3 and line 26. A source of process chemical 36 is provided in a suitable container, which in the electronics industry is typically a bubbler or a direct liquid injection device. The process chemical is delivered by the pressure of an inert gas 42 controllably delivered through valve V.sub.14 and line 40. As the inert gas 42 pressurizes the source 36, process chemical is delivered through line 38 and first process valve V.sub.6 to

Art Unit: 1746

process line 30. Normally, process line delivers process chemical through second process valve V.sub.5 to a downstream process chemical use station or tool 34. When it is appropriate to clean out process line 30, such as during down time, changeout of the container 36, maintenance of the system or change in the type of chemical being utilized, it is necessary to remove residual process chemical from the process line 30. Initially, this is done through vent valve V.sub.7 and vent line 44. Vent line 44 is controllably connected to a first source of vacuum 52 either directly through vent valve V.sub.9 having an upstream orifice near the vent line 44 and a downstream orifice near the first source of vacuum 52. The vent line 44 may also be controllably connected to the first source of vacuum 52 through line 46, valve V.sub.8, vent storage vessel 48 (solvent capture ampoule), valve V.sub.10 and line 50, which connects to said first source of vacuum 52. Alternatively, the vent line 44 may be connected to the source of process chemical 36 via valve V.sub.15 and line 54 so as to return process chemical to source container 36 (see col. 6., lines 57 to col. 7, lines 1-30).

This solvent purge manifold completely removes traces of process chemical from the delivery lines, regardless of chemical volatility, by introducing a solvent suitable for the process chemical into the space immediately downstream of the chemical supply vessel. Each chemical may have its own optimal solvent, for example, 1,1,1,5,5,5-hexafluoro-2,4-pentanedionato copper (I) trimethylvinylsilane is most easily removed using trimethylvinylsilane, while trimethylphosphate can be removed using methanol or isopropyl alcohol.

Voloshin et al apparatus containers are attached to each other through the piping system. Therefore, all the containers are integral to of container 36 and anticipate the claimed apparatus.

Furthermore, solvent capture ampoule contains a sorbent for said solvent has not given any patentability weight since it is a future intended use and has no structural limitations.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 8-10, 13, 16, 19, 30-36, 38-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voloshin et al in view of Cripe et al.

Voloshin et al were discussed supra. However, the reference fails to disclose a diptube connected to the outlet and extend to a point adjacent a bottom of the container or level sensor or solvent ampoule under pressure or capture ampoule under vacuum..

Cripe et al. (5,607,000) disclose containers having dip tubes adjacent to the bottom of the container for exiting liquid from the dip tube. Also, the reference discloses magnetic reed switch level control 12 for high 37 and low 36 level which give signal outputs via line 46 to main controller (see col. 3, lines 35-42 and lines 51-54).

Art Unit: 1746

It would have been obvious at the time applicant invented the claimed apparatus and process to include dip tube and level sensor as disclosed by Cripe et al. for the purpose of removing liquid from the container and to check the level of liquid in the containers. One of ordinary skill in the art would use a pressurized tank or a vacuum tank instead of using pressure pump or vacuum pump to reduce the cost of the apparatus and to reduce the wait of the apparatus. It would have been obvious to use welding or soldering or other fastening means to tie the tanks for the purpose of having all the tanks together and easy for handling the tanks.

Allowable Subject Matter

Claims 5-7 and 28-29 are allowed over the cited prior art.

Reasons For Allowable Subject Matter

The following is an Examiner's statement of reasons for the indication of allowable subject matter:

None of the prior art discloses or suggests to have a chime ring bracket on an exterior of the high purity chemical source container or wherein high purity chemical container has a baffle to define two chambers to contain two distinct high purity source chemicals wherein each chamber has at least one inlet to the interior of such chamber and at least one outlet from the interior of such chamber.

Response to the arguments

The applicant argued that US Patent 5,964,230 does not show any particular association of the solvent source ampoule, source chemical container or solvent capture ampoule other than a flow path association.

This argument is not persuasive because the claimed apparatus recite that "the solvent ampoule and the solvent capture ampoule are attached to the main body of the source chemical container" but Voloshine et al and Cripe et al both show solvent and chemical containers attached through the piping system, which reads on the claimed apparatus.

Art Unit: 1746

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saeed T. Chaudhry whose telephone number is (703) 308-3319. The examiner can normally be reached on Monday-Friday from 9:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Randy Gulakowski, can be reached on (703)-308-4333. The fax phone number for non-final is (703)-872-9310 and for after final is 703-872-9311.

When filing a FAX in Gp 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.

*Saeed T. Chaudhry
Patent Examiner
September 15, 2003*



RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700